CLAIMS

1. A feedforward filter, the feedforward filter comprising:

a plurality of feedforward filter taps, including a feedforward filter reference tap;

a coefficient for each feedforward filter tap; and

wherein the reference tap is located proximate a center position of the feedforward filter.

2. The feedforward filter as recited in claim 1, wherein the reference tap is located at a center position of the feedforward filter.

3. The feedforward filter as recited in claim 1, wherein a value of the coefficient of the reference tap is greater than a value of each of the coefficients of each of the other feedforward filter taps.

4. A receiver comprising:

a feedforward filter coupled to process signals received by the receiver, the feedforward filter having a plurality of feedforward filter taps, including a feedforward filter reference tap;

a feedback filter coupled to receive signals representative of an output of the feedforward filter, the feedback filter having a plurality of feedback filter taps; and

wherein the feedforward filter reference tap is located proximate a center position of the feedforward filter, so as to enhance noise cancellation.

5. The receiver as recited in claim 4, wherein the feedforward filter reference tap is located at a center position of the feedforward filter.

6. The receiver as recited in claim 4, wherein each of the feedforward filter taps has a coefficient and a value of the coefficient of the feedforward filter reference tap is greater than a value of each of the coefficients of each of the other feedforward filter taps.

7. The receiver as recited in claim 4, wherein each of the feedback filter taps has a coefficient and a value of at least one of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

8. The receiver as recited in claim 4, wherein each of the feedback filter taps has a coefficient and a value of each of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

9. The receiver as recited in claim 4, wherein the feedforward filter and the feedback filter cooperate to at least partially define a decision feedback equalizer.

10. The receiver as recited in claim 4, wherein the feedforward filter and the feedback filter cooperate to define a portion of a DSL receiver.

11. A transceiver comprising:

a transmitter;

a receiver, the receiver comprising:

a feedforward filter coupled to process signals received by the receiver, the feedforward filter having a plurality of feedforward filter taps, including a feedforward filter reference tap;

a feedback filter coupled to receive signals representative of an output of the feedforward filter, the feedback filter having a plurality of feedback filter taps; and

wherein the feedforward filter reference tap is located proximate a center position of the feedforward filter, so as to enhance noise cancellation.

12. The transceiver as recited in claim 11, wherein the feedforward filter reference tap is located at a center position of the feedforward filter.

13. The transceiver as recited in claim 11, wherein each of the feedforward filter taps has a coefficient and a value of the coefficient of the feedforward filter reference tap is greater than a value of each of the coefficients of each of the other feedforward filter taps.

14. The transceiver as recited in claim 11, wherein each of the feedback filter taps has a coefficient and a value of at least one of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

15. The transceiver as recited in claim 11, wherein each of the feedback filter taps has a coefficient and a value of each of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

16. The transceiver as recited in claim 11, wherein the feedforward filter and the feedback filter cooperate to at least partially define a decision feedback equalizer.

17. The transceiver as recited in claim 11, wherein the feedforward filter and the feedback filter cooperate to define a portion of a DSL transceiver.

18. A communication system comprising:

a plurality of transceivers, at least two of which are configured to communication with one another and comprising:

a transmitter;

a receiver, the receiver comprising:

a feedforward filter coupled to process signals received by the receiver, the feedforward filter having a plurality of feedforward filter taps, including a feedforward filter reference tap;

a feedback filter coupled to receive signals representative of an output of the feedforward filter, the feedback filter having a plurality of feedback filter taps; and

wherein the feedforward filter reference tap is located proximate a center position of the feedforward filter, so as to enhance noise cancellation.

19. The communication system as recited in claim 18, wherein the feedforward filter reference tap is located at a center position of the feedforward filter.

20. The communication system as recited in claim 18, wherein each of the feedforward filter taps has a coefficient and a value of the coefficient of the feedforward filter reference tap is greater than a value of each of the coefficients of each of the other feedforward filter taps.

21. The communication system as recited in claim 18, wherein each of the feedback filter taps has a coefficient and a value of at least one of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

22. The communication system as recited in claim 18, wherein each of the feedback filter taps has a coefficient and a value of each of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

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23. The communication system as recited in claim 18, wherein the feedforward filter and the feedback filter cooperate to at least partially define a decision feedback equalizer.

24. The communication system as recited in claim 18, wherein the feedforward filter and the feedback filter cooperate to define a portion of a DSL transceiver.

25. A method for mitigating noise in a communication device, the method comprising:

filtering a received signal with a feedforward filter, the feedforward filter comprising:

a plurality of feedforward filter taps, including a feedforward filter reference tap;

a coefficient for each feedforward filter tap; and

wherein the reference tap is located proximate a center position of the feedforward filter.

26. The method as recited in claim 25, wherein the reference tap is located at a center position of the feedforward filter.

27. The method as recited in claim 25, wherein a value of the coefficient of the reference tap is greater than a value of each of the coefficients of each of the other feedforward filter taps.

28. The method as recited in claim 25, further comprising:

filtering the received signal with a feedback filter, the feedback filter having a plurality of feedback filter taps; and

wherein each of the feedback filter taps has a coefficient and a value of at least one of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

29. The method as recited in claim 25, further comprising:

filtering the received signal with a feedback filter, the feedback filter having a plurality of feedback filter taps; and

wherein each of the feedback filter taps has a coefficient and a value of each of the coefficients of the feedback filter taps is clamped so as to mitigate error propagation.

30. A ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from a decision feedback filter;

a coefficient ramping circuit configured to provide a ramped output for at least one of the decision feedback filter tap coefficients, the ramped output being varied over time from a first value to a second value, the second value being dependent upon a decision feedback filter tap coefficient; and

an output port configured to communicate information representative of the ramped output(s) to a precoder.

31. The ramping circuit assembly as recited in claim 30, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a feedback filter tap coefficient.

32. The ramping circuit assembly as recited in claim 30, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the precoder and a new value of the tap coefficient of the precoder.

33. The ramping circuit assembly as recited in claim 30, wherein the ramped output is ramped generally linearly.

34. The ramping circuit assembly as recited in claim 30, wherein the ramped output is ramped non-linearly.

35. The ramping circuit assembly as recited in claim 30, wherein the ramped output is ramped generally exponentially.

36. The ramping circuit assembly as recited in claim 30, wherein the coefficient ramping circuit is configured to define a portion of a receiver.

37. The ramping circuit assembly as recited in claim 30, wherein the coefficient ramping circuit is configured to define a portion of a transmitter.

38. The ramping circuit assembly as recited in claim 30, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

39. The ramping circuit assembly as recited in claim 30, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

40. A receiver comprising:

a decision feedback filter;

a ramping circuit assembly, the ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from the decision feedback filter;

a coefficient ramping circuit configured to provide a ramped output for at least one of the decision feedback filter tap coefficients, the ramped output being varied over time from a first value to a second value, the second value being dependent upon a decision feedback filter tap coefficient; and

an output port configured to communicate information representative of the ramped output(s) to a precoder.

41. The receiver as recited in claim 40, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a feedback filter tap coefficient.

42. The receiver as recited in claim 40, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the precoder and a new value of the tap coefficient of the precoder.

43. The receiver as recited in claim 40, wherein the ramped output is ramped generally linearly.

44. The receiver as recited in claim 40, wherein the ramped output is ramped non-linearly.

45. The receiver as recited in claim 40, wherein the ramped output is ramped generally exponentially.

46. The receiver as recited in claim 40, wherein the coefficient ramping circuit is configured to define a portion of a receiver.

47. The receiver as recited in claim 40, wherein the coefficient ramping circuit is configured to define a portion of a transmitter.

48. The receiver as recited in claim 40, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

49. The receiver as recited in claim 40, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

50. A transmitter comprising:

a precoder;

a ramping circuit assembly, the ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from a decision feedback filter;

a coefficient ramping circuit configured to provide a ramped output for at least one of the decision feedback filter tap coefficients, the varied output being ramped over time from

a first value to a second value, the second value being dependent upon a decision feedback filter tap coefficient; and

an output port configured to communicate information representative of the ramped output(s) to the precoder.

51. The transmitter as recited in claim 50, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a feedback filter tap coefficient.

52. The transmitter as recited in claim 50, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the precoder and a new value of the tap coefficient of the precoder.

53. The transmitter as recited in claim 50, wherein the ramped output is ramped generally linearly.

54. The transmitter as recited in claim 50, wherein the ramped output is ramped non-linearly.

55. The transmitter as recited in claim 50, wherein the ramped output is ramped generally exponentially.

56. The transmitter as recited in claim 50, wherein the coefficient ramping circuit is configured to define a portion of a receiver.

57. The transmitter as recited in claim 50, wherein the coefficient ramping circuit is configured to define a portion of a transmitter.

58. The transmitter as recited in claim 50, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

59. The transmitter as recited in claim 50, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

60. A transceiver comprising:

a decision feedback filter;

a precoder;

a ramping circuit assembly, the ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from the decision feedback filter;

a coefficient ramping circuit configured to provide a ramped output for at least one of the decision feedback filter tap coefficients, the ramped output being varied over time from a first value to a second value, the second value being dependent upon a decision feedback filter tap coefficient; and

an output port configured to communicate information representative of the ramped output(s) to a precoder of a complimentary transceiver.

61. The transceiver as recited in claim 60, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a feedback filter tap coefficient.

62. The transceiver as recited in claim 60, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the

precoder of the complimentary transceiver and a new value of the tap coefficient of the precoder of the complimentary transceiver.

63. The transceiver as recited in claim 60, wherein the ramped output is ramped generally linearly.

64. The transceiver as recited in claim 60, wherein the ramped output is ramped non-linearly.

65. The transceiver as recited in claim 60, wherein the ramped output is ramped generally exponentially.

66. The transceiver as recited in claim 60, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

67. The transceiver as recited in claim 60, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

68. A transceiver comprising:

a decision feedback filter;

a precoder;

a ramping circuit assembly, the ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from a decision feedback filter of a complimentary transceiver;

a coefficient ramping circuit configured to provide a ramped output for at least one of the tap coefficients of the complimentary decision feedback filter, the ramped output being varied over time from a first value to a second value, the second

value being dependent upon the tap coefficient of the complimentary decision feedback filter; and

an output port configured to communicate information representative of the ramped output(s) to the precoder.

69. The transceiver as recited in claim 68, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a feedback filter tap coefficient.

70. The transceiver as recited in claim 68, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the precoder and a new value of the tap coefficient of the precoder.

71. The transceiver as recited in claim 68, wherein the ramped output is ramped generally linearly.

72. The transceiver as recited in claim 68, wherein the ramped output is ramped non-linearly.

73. The transceiver as recited in claim 68, wherein the ramped output is ramped generally exponentially.

74. The transceiver as recited in claim 68, wherein the coefficient ramping circuit is configured to define a portion of a receiver.

75. The transceiver as recited in claim 68, wherein the coefficient ramping circuit is configured to define a portion of a transmitter.

76. The transceiver as recited in claim 68, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

77. The transceiver as recited in claim 68, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

78. A communication system comprising:

at least two transceivers, each transceiver comprising:

a decision feedback filter;

a precoder;

a ramping circuit assembly, the ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from the decision feedback filter;

a coefficient ramping circuit configured to provide a ramped output for at least one of the decision feedback filter tap coefficients, the ramped output being varied over time from a first value to a second value, the second value being dependent upon a decision feedback filter tap coefficient; and

an output port configured to communicate information representative of the ramped output(s) to a precoder of a complimentary transceiver.

79. The communication system as recited in claim 78, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a filter tap coefficient.

80. The communication system as recited in claim 78, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the precoder of the complimentary transceiver and a new value of the tap coefficient of the precoder of the complimentary transceiver.

81. The communication system as recited in claim 78, wherein the ramped output is ramped generally linearly.

82. The communication system as recited in claim 78, wherein the ramped output is ramped non-linearly.

83. The communication system as recited in claim 78, wherein the ramped output is ramped generally exponentially.

84. The communication system as recited in claim 78, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

85. The communication system as recited in claim 78, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

86. A communication system comprising:

at least two transceivers, each transceiver comprising:

a decision feedback filter;

a precoder;

a ramping circuit assembly, the ramping circuit assembly comprising:

an input port configured to receive at least one decision feedback filter tap coefficient from a decision feedback filter of a complimentary transceiver;

a coefficient ramping circuit configured to provide a ramped output for at least one of the tap coefficients of the complimentary decision feedback filter, the ramped output being varied over time from a first value to a second value, the second value being dependent upon the tap coefficient of the complimentary decision feedback filter; and

an output port configured to communicate information representative of the ramped output(s) to the precoder.

87. The communication system as recited in claim 86, wherein the ramped output is ramped from a value of approximately zero to a value approximately equal to a value of a filter tap coefficient.

88. The communication system as recited in claim 86, wherein the information representative of the ramped values comprises a difference between a present value of a tap coefficient of the precoder and a new value of the tap coefficient of the precoder.

89. The communication system as recited in claim 86, wherein the ramped output is ramped generally linearly.

90. The communication system as recited in claim 86, wherein the ramped output is ramped non-linearly.

91. The communication system as recited in claim 86, wherein the ramped output is ramped generally exponentially.

92. The communication system as recited in claim 86, wherein the coefficient ramping circuit is configured to define a portion of a receiver.

93. The communication system as recited in claim 86, wherein the coefficient ramping circuit is configured to define a portion of a transmitter.

94. The communication system as recited in claim 86, wherein the coefficient ramping circuit is configured to define a portion of a DSL receiver.

95. The communication system as recited in claim 86, wherein the coefficient ramping circuit is configured to define a portion of a DSL transmitter.

96. A message received by a communication device, the message being stored on machine readable media and containing information processed according to the method comprising:

filtering a received signal with a feedforward filter, wherein the feedforward filter has a plurality of feedforward filter taps, including a feedforward filter reference tap; and

wherein the reference tap is positioned proximate a center position of the feedforward filter.

97. A message received by a communication device, the message being stored on a machine-readable media and containing information processed according to the method comprising precoding a signal to be transmitted with a precoder, the precoder having tap coefficients which are ramped over time from a first value to a second value, the second value being dependent upon a decision feedback filter tap coefficient.